

REMARKS

Applicants have amended claims 1 and 6, canceled of claims 19, 20 and 76, and added new claims 79-81 herein. Support for the amendments and additional claims can be found in the claims and specification as originally filed, in particular in Example 2, paragraphs [0103], [0106], [0108] and [0111]. As such, the amendments do not raise any issues of new matter and the amended claims do not present new issues requiring further consideration or search. Applicants respectfully request entry of the amendments set forth in this response under 37 C.F.R. §1.116. Subsequent to the entry of the present amendment, claims 1-14, and 77-81 will be pending and at issue.

Applicants submit that the pending claims are in condition for allowance or appeal and respectfully request that the amended claims be entered.

Rejection Under 35 U.S.C. §112, First Paragraph

Claims 1-14, 19, 20 and 76-78 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement.

Specifically, the Office Action alleges that claims 19 and 20 are “directed to the measurement of reverse transcriptase activity using nucleotide templates,” but claim 1, from which claims 19 and 20 depend, is “merely a method of identifying an agent which elevates intracellular manganese ion concentration in a cell and any speculation as the effect thereof on reverse transcriptase is solely a mental step or calculation on the part of the Applicant.” As detailed further below, Applicants have amended claim 1 to recite that detection of an elevated concentration of intracellular manganese ions is indicative of an agent that inhibits reverse transcriptase activity in a cell. Support for the amendment can be found in, for example, paragraph [0054] of the Specification. Additionally, claims 19 and 20, have been canceled, therefore, Applicants request withdrawal of the rejection.

Rejection Under 35 U.S.C. §112, First Paragraph

Claims 6-9 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse the rejection as it applies to the amended claims.

Specifically, the Office Action alleges that there is insufficient antecedent basis for the limitation “the cell membrane” in claim 6. Without acquiescing to the reasoning offered by the Office Action, in order to expedite prosecution toward allowance, Applicants have amended claim 6 herein to replace “the cell membrane” with “a cell membrane.” Applicants respectfully request withdrawal of the rejection.

Rejections under 35 U.S.C. §102

Claims 1, 6, 7, 10-14 and 76-78 are rejected under 35 U.S.C. §102(b) as allegedly anticipated by Okorokov et al. (1994) as evidenced by Bates et al. Claim 76 has been cancelled herein, thus, the rejection of claim 76 is moot in view of the cancellation of the claim. Applicants respectfully traverse the rejection as it applies to the pending amended claims.

The Office Action alleges that Okorokov et al

teaches a method of identifying an agent that elevates intracellular manganese ion concentrations in yeast cells inherently comprising Pmr1p ATPase, comprising contacting yeast cells which inherently comprise cell membranes, with the test agent glucose which increases manganese transport into the cells, and detecting elevated intracellular manganese ion levels in the cells after glucose treatment as compared to manganese levels in the cells in the absence of glucose, wherein glucose does not alter transport of other divalent cations other than manganese, and contacting the cells with the test agent N-ethylmaleimide which inhibits manganese transport into the cells as compared to untreated cells and contacting the cells with the test agents 2-deoxyglucose, NaN₂, 2,4-Dinitrophenol and Oligomycin which inhibit manganese transport into the cells as compared to controls and wherein manganese concentrations are measured in isolated cell membranes.

The Office Action also states that “the preamble of claims 1 and 76, wherein the method is drawn to an agent that indirectly inhibits reverse transcriptase; amounts to an intended use of the compound and/or a mental interpretation of the results of the method. Therefore, the method of Okorokov et al. is deemed to inherently perform the invention embodied by claims 1 and 76 as it performs the same method steps of the claimed invention.” (Office Action, page 6.)

To anticipate, a single reference must inherently or expressly teach each and every element of claimed invention. *In re Spada*, 15 USPQ2d 1655 (Fed Cir. 1990); and *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). MPEP § 2131. Furthermore, the reference must be enabling (*see e.g., Chester v. Miller*, 15 U.S.P.Q.2d 1333 (Fed. Cir. 1990)). Claim 1 as currently amended recites a method of identifying an agent that inhibits reverse transcriptase comprising: a) contacting a cell comprising a divalent cation transporting protein with a test agent; b) detecting a change in the concentration of intracellular manganese ions in the cell after contact with the test agent as compared to the concentration of manganese ion levels in the absence of the test agent; and c) detecting reverse transcriptase activity in the cell using a polyribonucleotide or polydeoxyribonucleotide template for reverse transcriptase activity, wherein a decrease in activity of reverse transcriptase is indicative of an agent that inhibits reverse transcriptase.

Applicants respectfully submit that Okorokov et al does not disclose a correlation between increased manganese concentration and reverse transcriptase activity in a cell. Nor does Okorokov teach or suggest detection of decreased reverse transcriptase activity in the cell using a polyribo- or polydeoxyribo-nucleotide template. Since Okorokov does not teach or suggest a correlation between increased manganese concentration and reverse transcriptase activity in a cell, nor the positive process steps of detecting decreased reverse transcriptase activity in the cell, the reference cannot anticipate a method of identifying an agent that inhibits reverse transcriptase as presently claimed. Thus, the standard for anticipation has not been met.

For these reasons, Applicants respectfully request withdrawal of the rejection.

Rejection Under 35 U.S.C. §103

Claims 1-4, 6, 7, 10-14 and 76-78 stand rejected under 35 U.S.C. §103(a) as allegedly obvious over Okorokov et al. Claim 76 has been cancelled herein, thus, the rejection of claim 76 is moot in view of the cancellation of the claim. Applicants respectfully traverse the rejection as it applies to the pending amended claims.

The standard that has to be satisfied in order to make a valid rejection based on a *prima facie* case of obviousness has been modified recently by the recent Supreme Court decision in

KSR International v. Teleflex Inc., 127 S.Ct. 1727, 82 USPQ 2d. 1385 (2007). Under the KSR rule, three basic criteria are considered. First, some suggestion or motivation to modify a reference or to combine the teachings of multiple references still has to be shown. Second, the combination has to suggest a reasonable expectation of success. Third, the prior art reference or combination has to teach or suggest all of the recited claim limitations. Factors such as the general state of the art and common sense may be considered when determining the feasibility of modifying and/or combining references. The Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness.

The Office Action states that Okorokov “does not teach a method wherein the method is performed on an isolated yeast cell membrane.” (Office Action, page 7.) The Office Action also alleges, in pertinent part, that “[i]t would have been obvious to one of ordinary skill in the art at the time of the instant invention to modify the method of identifying an agent that elevates intracellular manganese ion concentrations in yeast cells by performing the method on isolated yeast cell membranes because one of ordinary skill in the art would be able to study the effect of specific inhibitors on the transport of manganese ions into specific cell compartments.” (Office Action, page 7.)

As detailed above, amended claim 1 recites the correlation between increased manganese concentration and reverse transcriptase activity in a cell, and also recites the positive process step of detecting decreased reverse transcriptase activity in the cell using a polyribo- or dexoyribonucleotide template. Since Okorokov does not teach or suggest correlation between increased manganese concentration and reverse transcriptase activity in a cell, nor does Okorokov teach or suggest detection of decreased reverse transcriptase activity in the cell using a polynucleotide template, the reference cannot render obvious a method of identifying an agent that inhibits reverse transcriptase as presently claimed.

Furthermore, there is nothing in Okorokov et al which discloses or suggests all of the required elements of the current independent claims i.e., a method of identifying an agent that inhibits reverse transcriptase comprising: a) contacting a cell comprising a divalent cation transporting protein with a test agent; b) detecting a change in the concentration of intracellular manganese ions in the cell after contact with the test agent as compared to the concentration of

manganese ion levels in the absence of the test agent; and c) detecting decreased reverse transcriptase activity in the cell using a polynucleotide template.

Applicants' disclosure cannot be used as a "blueprint" to reconstruct, by hindsight, Applicants' claim. See, e.g., *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985). Since the teachings of Okorokov et al would not result in a method of identifying an agent that inhibits reverse transcriptase as currently claimed, one of skill in the art would not have an expectation of success because the invention as claimed could not be achieved in view of such teachings.

Applicants submit that because there is no reasonable expectation of successfully achieving the invention as claimed, no *prima facie* case for obviousness exists. For these reasons, Applicants respectfully request that the rejection, including as it might be applied against the amended claims, be withdrawn.

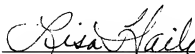
Conclusion

Applicants submit that pending claims 1-14 and 77-81 are in condition for allowance. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this submission.

No fee is deemed necessary with the filing of this paper. However, the Commissioner is hereby authorized to charge any fees required by this submission, or credit any overpayments, to Deposit Account No. 07-1896 referencing the above-identified docket number.

Respectfully submitted,

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